UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,525	04/20/2004	Esa Malkamaki	60091.00299	2764

32294 7590 03/28/2007

SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

EXAMINER	
MONDESIR, ABDIAS	
ART UNIT	**PAPER NUMBER**
2609	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/827,525	MALKAMAKI, ESA	
	Examiner	Art Unit	
	Abdias Mondesir	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-36 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 20 April 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 9/23/05.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 16-26 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility. The aforementioned claims disclose a "computer program product comprising of data units" which describes nonstatutory functional descriptive material. The claims do not define the structural and function interrelationship of the computer program and the rest of the computer. This is necessary to show the program's functionality that is needed to satisfy USC 101.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 8-14 and 16-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Yi et al. (US 2003/0128705), hereinafter, referred as Yi.

Regarding claim 1, Yi discloses a communication method in a radio system comprising a network infrastructure, and at least one user terminal communicating with

the network infrastructure over an air interface (see Fig. 1), the method comprising associating data units of each logical channel with sequence numbers in a transmitting user terminal (Fig 6, numbers associated with data blocks 180; paragraph 43).

Regarding claim 2, Yi disclose the method in claim 1, further comprising,

receiving, in the network infrastructure, data units of at least one logical channel associated with sequence numbers in the user terminal;

and arranging, in a network element of the network infrastructure, the data units of each logical channel in order of the sequence number associated with the data units (see Fig. 6, arranged data blocks 13-20 in reordering buffer 190 of receiving side).

Regarding claim 3 Yi discloses the method of claim 1, further comprising performing at least one retransmission including at least on data unit of a logical channel from user terminal to the network infrastructure over the air interface (paragraphs 48-50).

Regarding clams 4 and 5 Yi discloses the method of claim 1, further comprising:

associating each data unit of one transmission time interval with one sequence number;

and associating data units in successive transmission time intervals with successive sequence numbers (paragraphs 45-47)

Regarding claim 8, Yi discloses a communication method in a radio system comprising a network infrastructure, and at least one user terminal communicating with the network infrastructure over an air interface, the method comprising associating data units of each logical channel with sequence numbers in a medium access control-d entity, in a radio link control entity or in an entity between the radio link control entity and the medium access control-d entity of a user terminal (paragraphs 34-36).

Regarding claim 9, Yi discloses the method of claim 8, further comprising arranging the data units of each logical channel in the radio link control entity, in the medium access control-d entity or in the entity between the radio link control entity and the medium access control-d entity of a network element of the network infrastructure (paragraphs 41-43).

Regarding claim 10, Yi discloses the method of claim 8, further comprising arranging the data units in a radio network controller (see Fig. 1, when the data is transmitted to Node B 108 it must also be transmitted to RNC 106 and then rearranged).

Regarding claim 11, Yi discloses a communication method in a radio system comprising a network infrastructure, and at least one user terminal communicating with the network infrastructure over an air interface, the method comprising: receiving, in the network infrastructure, data units of at least one logical channel associated with

sequence numbers in the user terminal; and arranging the data units of each logical channel in a network element of the network infrastructure (see Fig. 6, data blocks 180 on transmitter side are transmitted and rearranged as data blocks 190 on the receiver side).

Regarding claim 12, Yi discloses a communication method in a radio system comprising a network infrastructure, and at least one user terminal communicating with the network infrastructure over an air interface, the method comprising:

associating each data unit of a logical channel in one transmission time interval with one sequence number;

and associating data units in successive transmission time intervals with successive sequence numbers in a transmitting user terminal (paragraphs 45-47).

Regarding claim 13, Yi discloses the method of claim 12, further comprising: receiving, in the network infrastructure, data units of at least one logical channel associated with sequence numbers in the user terminal; and arranging, in the network infrastructure, the data units in order of the sequence numbers associated with the data units in the network infrastructure (see Fig. 6, data blocks 180 on transmitter side are transmitted and rearranged as data blocks 190 on the receiver side).

Regarding claim 14, Yi discloses the method of claim 12, further comprising performing at least one retransmission including at least one data unit of a logical

channel from the user terminal to the network infrastructure over the air interface (paragraphs 48-50).

Regarding claims 16-26, Yi discloses a computer program that performs the entire steps described within the claims (paragraph 198).

Regarding claim 27, Yi discloses a network element of a radio system comprising a network infrastructure, and at least one user terminal is configured to communicate with the network infrastructure over an air interface, wherein the network element is a part of the network infrastructure; the network element is configured to receive data units of each logical channel from a user terminal, the data units being associated with sequence numbers in a user terminal; and the network element is configured to arrange the data units of each logical channel in order according to the sequence numbers associated with the data units (see Fig. 6, data blocks 180 on transmitter side are transmitted and rearranged as data blocks 190 on the receiver side).

Regarding claim 28, Yi discloses the network element of claim 27, wherein the radio network controller is configured to arrange the data units of each logical channel in order of the sequence numbers in a medium access control-d entity, in a radio link control entity or at an entity between a radio link control entity and a medium access control-d entity (paragraphs 34-36).

Regarding claim 30, Yi discloses a user terminal of a radio system comprising a network infrastructure, wherein a user terminal is configured to associate data units of each logical channel with sequence numbers (see Fig. 6

Regarding claim 31, Yi discloses the user terminal of claim 30, wherein the user terminal is configured to associate data units of each logical channel with sequence numbers in a medium access control-d entity, in a radio link control entity or at an entity between a radio link control entity and a medium access control-d entity of a user terminal (paragraphs 34-36).

Regarding claim 32, Yi discloses the user terminal of claim 30, wherein the user terminal is configured to transmit the data units to the network infrastructure and to perform at least one retransmission as a response to a request from the network infrastructure over an air interface, the retransmission including at least one data unit of a logical channel (paragraphs 48-50).

Regarding claim 33, Yi discloses a radio system comprising a network infrastructure and at least one user terminal communicating with the network infrastructure over an air interface, wherein a user terminal is configured to associate data units of each logical channel with sequence numbers (paragraphs 34-36).

Regarding claim 34, Yi discloses a radio system comprising a network infrastructure and at least one user terminal communicating with the network infrastructure over an air interface, wherein a user terminal is configured to associate data units of each logical channel with sequence numbers in a medium access control-d entity, in a radio link control entity or in an entity between a radio link control entity and a medium access control-d entity (paragraph 34-36).

Regarding claim 35, Yi discloses a radio system comprising a network infrastructure and at least one user terminal communicating with the network infrastructure over an air interface, wherein,

a user terminal is configured to associate data units of each logical channel with sequence numbers;

the network infrastructure is configured to receive the data units of at least one logical channel associated with sequence numbers;

and the network infrastructure is configured to arrange the data units of each logical channel in order of the sequence numbers (see Fig. 6, data blocks 180 on transmitter side are transmitted and rearranged as data blocks 190 on the receiver side).

Regarding claim 36, Yi discloses a radio system comprising a network infrastructure and at least one user terminal communicating with the network infrastructure over an air interface, wherein a user terminal is configured to associate

each data unit of a logical channel in one transmission time interval with one sequence number and the user terminal is configured to associate data units in successive transmission time intervals with successive sequence numbers (paragraphs 45-47).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi in view of Cheng et al. (US 2004/0228313), hereinafter, referred as Cheng.

Regarding claim 6, Yi discloses all the limitations of the method of claim 1, but fails to teach the further limitations of claim 6. Cheng teaches the mapping medium access control-e flows from a medium access control-d entity to transport channels in a medium access control-e entity of the user terminal; and associating data units with sequence numbers common to the medium access control-d entity and the medium access-e entity (see fig 3, MAC-d #320 and MAC-EU #340; paragraph 40, lines 1-3 and paragraph 47). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Yi teaching to include the mapping of the data to improve uplink transmission. One is motivated by such because using the transport channels of the medium access control-e entity allows for high uplink rates.

Regarding claim 7, Yi discloses all the limitation of the method of claim 1, but fails to teach transmitting the data units using enhanced uplink dedicated channel. Cheng teaches in paragraph 47 that data units (MAC-d flows that are the input of MAC-EU 340) are transmitted using the enhanced uplink dedicated channel (output of the MAC-EU). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Yi teaching to use an enhanced uplink dedicated channel for transmitting the data units. One is motivated by such in order "to be able to schedule a specific UE with a relatively good channel condition to send high rate uplink data based on the UE's capabilities" (paragraph 22).

Allowable Subject Matter

7. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdias Mondesir whose telephone number is 571-270-3014. The examiner can normally be reached on M - Th 7:30am - 5:00pm and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelly can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AM

CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600